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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|--|------------------|
| 10/728,787 | 12/08/2003 | Ho-Kyoon Chung | 61610108US | 2371 |
| 58027 7590 02/08/2007 H.C. PARK & ASSOCIATES, PLC 8500 LEESBURG PIKE SUITE 7500 VIENNA, VA 22182 | | | EXAMINER ARANCIBIA, MAUREEN GRAMAGLIA | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1763 | |
| SHORTENED STATUTORY PERIOD OF RESPONSE | | MAIL DATE | DELIVERY MODE | |
| 3 MONTHS | | 02/08/2007 | PAPER | |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/728,787

Applicant(s)

CHUNG ET AL.

Examiner

Maureen G. Arancibia

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 January 2007.
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-6,8,11 and 13 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1,2,4-6,8,11 and 13 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 30 August 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 19 January 2007 has been entered.

Claim Objections

2. **Claims 4 and 8 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.**

Specifically, the recitation in Claims 4 and 8 that the upper and lower substrates are etched to have a total thickness of at most 0.5 mm is a broader limitation than that recited in the parent Claims 1 and 5, that each of the upper and lower substrates are etched to a thickness of about 100 micrometers (0.1 mm) or less.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 2, 4-6, 8, 11, and 13 rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,391,137 to Matsushima in view of U.S. Patent 5,766,493 to Shin and U.S. Patent 6,908,638 to Ueda et al.

In regards to Claims 1, 5, 11, and 13, Matsushima teaches a prior art method of manufacturing a thin flat panel display (Figure 12), comprising: preparing an etchable upper substrate 2 and an etchable lower substrate 1; forming image display devices (Column 1, Lines 45-49) on an inner surface of the lower substrate, and isolating them within device divisions 6; combining the upper and lower substrates, such that the image display devices are each completely surrounded by an inner sealant 3 (made continuous by filling injection hole 3a; Column 1, Lines 50-54 and 64-67; Figure 12); etching the outer surfaces of the upper and lower substrates (Column 2, Lines 15-20); and cutting the combined upper and lower substrates into individual image display units (Column 3, Lines 1-5). Each of the image display devices are completely surrounded by an inner sealant 3, and all of the image display devices and the inner sealants are surrounded by an outer sealant 4. (Figure 12; Column 1, Lines 54-56)

Matsushima does not expressly teach that the combining in the prior art method *further* comprises completely covering each lateral side of the combined upper and lower substrates with an unetchable protection film.

However, Matsushima teaches another method, wherein each lateral side of combined upper and lower substrates 100, 101 is completely covered with an unetchable protection film 203. (Column 8, Lines 45-50; Figures 3 and 4)

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It would have been obvious to one of ordinary skill in the art to modify the prior art method taught by Matsushima to additionally completely cover each lateral side of the combined upper and lower substrates with an unetchable protection film. The motivation for doing so, as taught by Matsushima (Column 8, Lines 38-42), would have been to prevent the etchant from entering the gap between the upper and lower substrates during etching.

Further in regards to Claims 1 and 5, and in regards to Claims 4 and 8, Matsushima does not expressly teach that the upper and lower substrates are etched to each have a thickness of 100 microns or less.

Shin teaches that it is desirable to have the upper and lower glass substrates for forming a flat panel display be thin and light (Column 2, Lines 14-15 and 24-25; Column 4, Lines 64-67), and that the thickness to which the substrates are etched is determined by the etching time, which can be set as desired (*predetermined*) (Column 4, Lines 14-22)

It would have been obvious to one of ordinary skill in the art to modify the method taught by Matsushima, through routine experimentation, to optimize the etching time as a result-effective variable, and thereby to optimize the resultant upper and lower glass substrate thicknesses to be 100 microns or less, in order to obtain a flat panel display that is thin and light. (Shin, Column 4, Lines 14-22 and 64-67)

Further in regards to Claims 1 and 5, Matsushima does not expressly teach that each image display device is an organic EL display device.

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Ueda et al. teaches that display devices can be organic EL display devices, formed by coating an organic luminescing layer 3. (Column 1, Lines 15-26; Column 2, Lines 10-15; Column 6, Lines 5-6)

It would have been obvious to one of ordinary skill in the art to further modify the method taught by Matsushima and Shin to have the individual display devices be organic EL display devices. The motivation for making such a modification, as taught by Ueda et al. (Column 18, Lines 27-37), would have been to employ display devices with a long service life. More broadly, it would have been obvious to substitute organic EL display devices for the LCD devices taught by Matsushima, since both are art-recognized equivalent means *of generating an electronic display*.

In regards to Claims 2 and 6, Matsushima teaches that the upper and lower substrates 1, 2, are formed of glass. (Column 1, Line 45)

Response to Arguments

5. Applicant's arguments with respect to the pending claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maureen G. Arancibia whose telephone number is (571) 272-1219. The examiner can normally be reached on core hours of 10-5, Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on (571) 272-1435. The fax phone

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number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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